



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,514	04/22/2004	Ross G. Robinson	CASE 7028	7337
41669	7590	05/09/2006	EXAMINER	
THE BABCOCK & WILCOX COMPANY PATENT DEPARTMENT 20 SOUTH VAN BUREN AVENUE BARBERTON, OH 44203				BONK, TERESA
		ART UNIT		PAPER NUMBER
		3725		

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/829,514	ROBINSON, ROSS G.
	Examiner	Art Unit
	Teresa M. Bonk	3725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 14 is/are allowed.  
 6) Claim(s) 1,4,5,8-13 and 15 is/are rejected.  
 7) Claim(s) 2-3, 6-, and 16 is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 20 April 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “second longitudinal slit” must be shown or the feature(s) canceled from the claim(s).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The specification is objected to because it lacks disclosure on a claimed feature, “a second longitudinal slit.” No new matter should be entered.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5 are rejected under 35 U.S.C. 102b) as being anticipated by Arai (5,937,686). Arai discloses an apparatus for bending a tube (11) having a sleeve (12), a bend die (1), a clamp die (2), and a pressure die (4). This invention is also capable of performing method steps comprising inserting the tube into an external sleeve with inner and outer surfaces, engaging the inner surface of the sleeve with a bend die mounted for rotation about the bending axis, engaging the outer surface of the sleeve with a clamp die, directing a pressure die against the outer surface of the sleeve adjacent the clamp die and rotating the clamp die and the bend die to bend the sleeve and the tube around the bend die (Figure 1 and 2).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 4-5, and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buy et al. (US Patent 5,765,285) in view of Talley et al. (US Patent 5,315,852). Buy et al. discloses a method for bending a tube comprising inserting the tube into an external sleeve (2) comprising carbon steel (Column 5, lines 2-4) and bending the sleeve and the tube together (Figures 1 and 3). The tube is bent to a bend radius between about 1 and 2 times the tube outer diameter (tube outer diameter of 1.5 inch, Column 3, lines 26-28 and a bend radius of 3 inches Column 2, lines 26-30). Buy et al. discloses the invention substantially except for the precise tube bender apparatus. Talley et al. discloses a pipe (20) bending apparatus having a bend die (12), a clamp die (22), and a pressure die (24). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Talley et al.'s bending

apparatus with Buy et al.'s method of bending as Buy et al. states in Column 2, lines 48-53, that "any tube bender available to those in the art for bending metal tubes can be used."

7. Claims 4 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai in view of Buy et al. Arai discloses the claimed invention substantially except for wherein the sleeve comprises carbon steel and the tube is bent to a bend radius between about 1 and 2 times the tube outer diameter. Buy et al. discloses a method for bending a tube comprising inserting the tube into an external sleeve (2) comprising carbon steel (Column 5, lines 2-4). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the sleeve comprise of carbon steel in order to achieve an article with a stronger composite structure "in pressure and temperature bearing properties," Column 2, lines 12-17. Buy et al. discloses a method a bending pipe having a tube outer diameter of 1.5 inch (Column 3, lines 26-28) and a bend radius of 3 inches (Column 2, lines 26-30). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the aforementioned bend radius with a corresponding tube diameter, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

8. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable Arai (5,937,686) in view of Huet (US Patent 2,882,953). Arai discloses the claimed invention substantially except for wherein the tube has a wall thickness less than about 10% of the diameter of the tube and 0.095"-0.250." Huet discloses a tube bender having a support sleeve having a thin wall tube whose wall thickness is less than 10% of the diameter of the tube, Column 1, lines 28-29. Therefore it would have been obvious to one of ordinary skill in the art at

the time the invention was made to use a tube with the desired wall thicknesses since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum of workable ranges involves only routine skill in the art.

9. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai and Huet as applied to claims 10, 12, and 14 above, and further in view of Buy et al. The combination of Arai and Huet disclose the claimed invention substantially except for wherein the tube is bent to a bend radius between about 1 and 2 times the tube outer diameter. Buy et al. discloses a method a bending pipe having a tube outer diameter of 1.5 inch (Column 3, lines 26-28) and a bend radius of 3 inches (Column 2, lines 26-30). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the aforementioned bend radius with a corresponding tube diameter, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

***Allowable Subject Matter***

10. Claims 2-3, 6-7, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 14 is allowed.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and further show the state of the art.

US Patents 2,812,004; 4,563,891; 2,856,981; 4,377,894; 4,009,601; 5,214,950; 4,137,743

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa M. Bonk whose telephone number is (571) 272-1901.

The examiner can normally be reached on M-F 7:30AM - 5PM with alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on (571) 272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Teresa M. Bonk  
Examiner  
Art Unit 3725



DERRIS H. BANKS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700